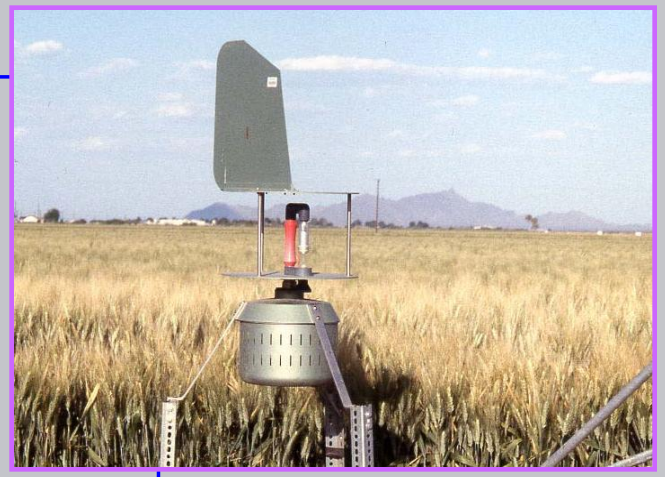
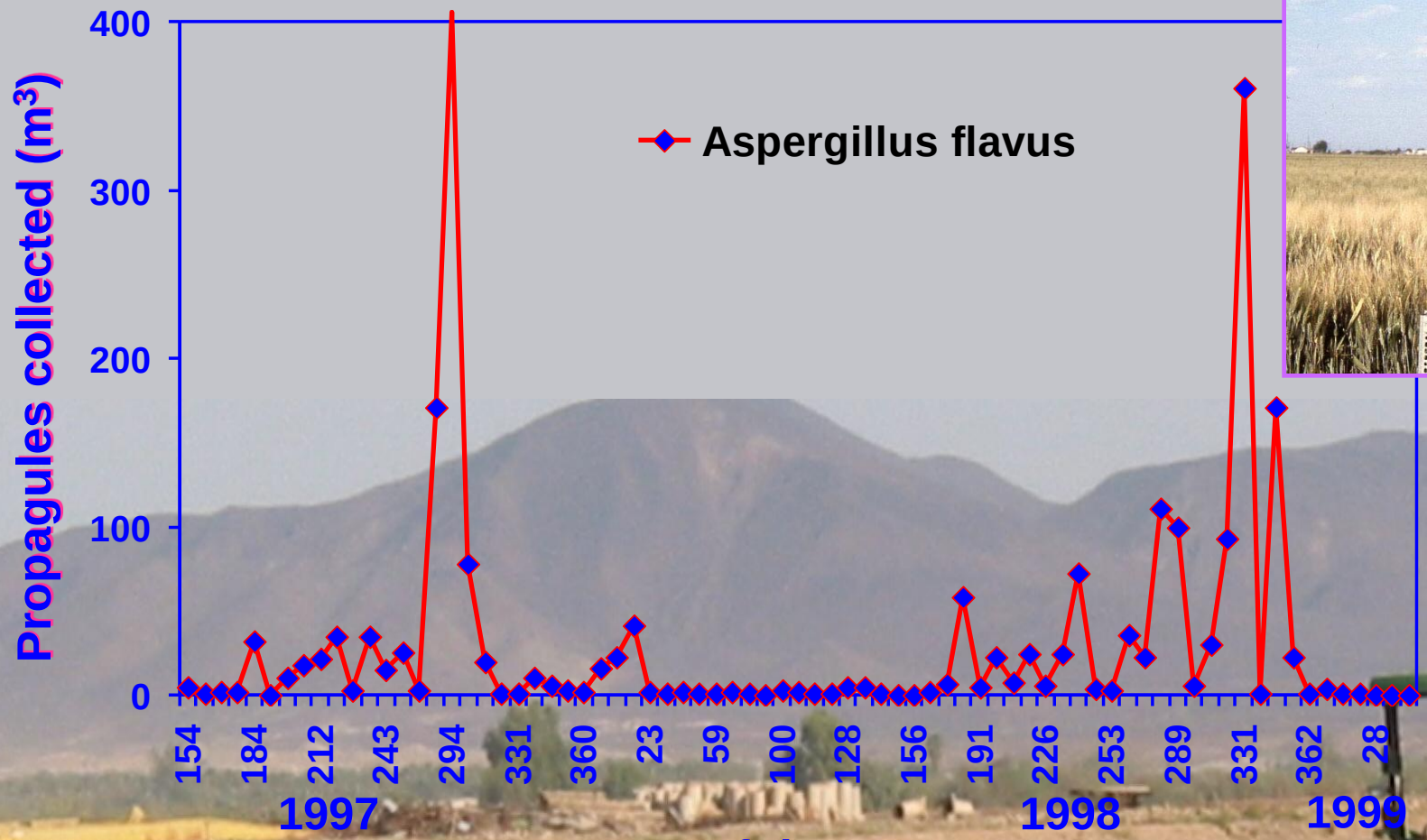
Panel Discussion:
Public Issues/Concerns Regarding Biological Cont

Peter J. Cotty, Research Plant Pathologist
Agricultural Research Service
United States Department of Agriculture
School of Plant Sciences
University of Arizona, Tucson

A. flavus is Common in Air of the Sonoran Desert





Bock, Mackey, & Cotty, 2004.
Plant Pathology 53:422-433.

Food-Safety Strategy Pits Germ vs. Germ

By Scott Kilman
Staff Reporter

As food p
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Though
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unconvention
method, known as biocompetitive exclusion, is gaining support as cheap, pesticide-free and accurate.

At the moment, the U.S. is losing the food poisoning war. The way food is produced and eaten today is making life

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peful that the same principle might work on a range of livestock for other pathogens such as the E. coli strain that caused the Jack in the Box poisonings. But many questions remain, including whether the digestive system of a ruminant animal is too complicated for this process.

The most controversial biocompetitive project is run by Peter J. Cotty, a plant pathologist who decorates his Agriculture Department business card with a fungus

Others are worried about the safety of handling *Aspergillus flavus*. Toxic or not, the spores can grow in the lungs of people with weakened immune systems. And some seed companies are aghast that the government would consider releasing a fungus that would still infect plants even if it doesn't taint the crop with a carcinogen.

Shouting Matches

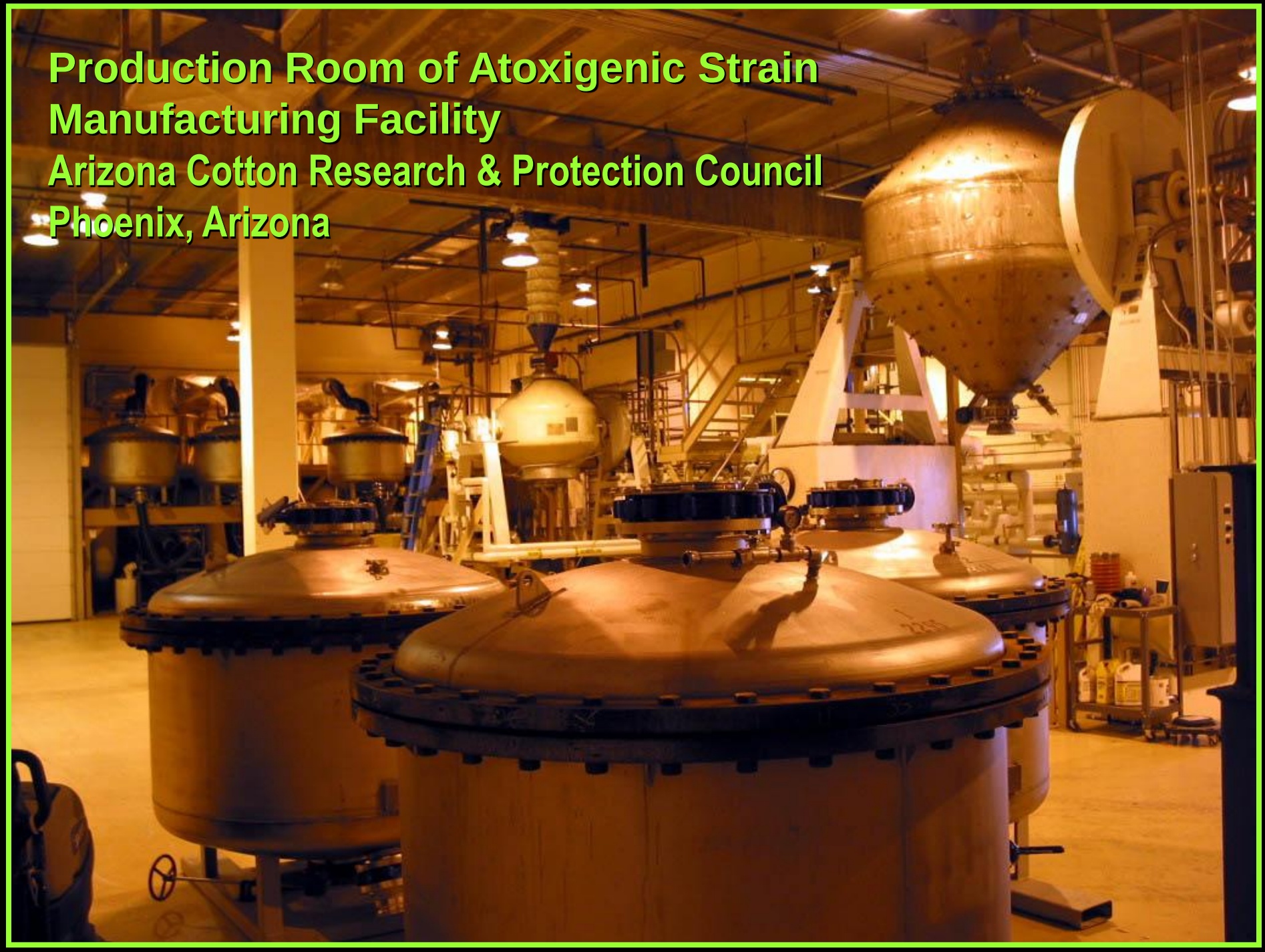
Dr. Cotty wants to try his idea on an entire cotton valley in Arizona. But food-safety conferences have erupted into shouting matches over his biocompetitive work, and he hasn't yet received

In the Lab

with weakened immune systems. And some seed companies are aghast that the government would consider releasing a fungus that would still infect plants even if it doesn't taint the crop with a carcinogen.

Dr. Cotty argues that his technique isn't any worse than farmers blindly modifying the microorganisms in their fields by working the soil. He says the technique doesn't change the fungal population in a field, just whether it is poisonous. "It is much more clever to select the fungi that will grow in our fields just like we select the plants," he says.

The Wall Street Journal
Tuesday March 16, 1993


Production Room of Atoxigenic Strain
Manufacturing Facility
Arizona Cotton Research & Protection Council
Phoenix, Arizona

SOUTHWEST FARM PRESS
Timely, Reliable Information for Southwest Agriculture

Non-toxic fungus may hold key to aflatoxin contamination

Mar 2, 2009 10:21 AM, By Ron Smith
Farm Press Editorial Staff

Drought can deliver a double whammy to dryland corn farmers in parts of Texas.

First they get hammered by reduced yields. Then they face the very real possibility that harvestable corn may be contaminated with aflatoxin, which puts the kibosh on most market outlets.

A product developed by a USDA research plant pathologist in Arizona may offer hope, however.

Peter Cotty has isolated a strain of the aflatoxin-producing pathogen, *Aspergillus flavus*, that's non-toxic and out-competes the toxic strain when applied on the soil surface. It's already approved for use in cotton in Arizona and Texas and another strain is approved for peanuts in Georgia.

Farmers in two Northeast Texas counties tested the product in corn last year and say fields treated with the non-toxic fungus showed no signs of aflatoxin contamination.

Nearby corn fields showed aflatoxin levels from 14 parts per billion to 200 parts per billion. As little as 20 parts per billion may result in corn being rejected at elevators.

"Aflatoxin can be a problem especially in dryland corn," says Grayson County, Texas, farmer Jack Norman, one of several Northeast Texas corn growers who used the experimental product, AF36, on a few fields last year under an Environmental Protection Agency permit.

"The problem occasionally shows up even in the Midwest," Norman says, "but they usually have enough non-infected corn to blend to acceptable levels."

"When we have problems we don't have enough corn to blend," says Bruce Wetzel, another Grayson County corn grower who used AF36 last year.

"Even in a good year, it's hard to sell East Texas corn to poultry and dairy operations," Norman says. That means most corn grown in this area is shipped to feedlots in West Texas. "We lose basis points. Freight costs to feedlots take away any market advantage we would have. We used to have a plus 50 cents per bushel basis. Now it's minus 50 cents."

"Egg producers may use some lower level aflatoxin corn," Wetzel says, "but dairies will use none. It shows up in milk."

"Just the threat of aflatoxin hurts our markets," Norman says.

That's why they're excited about the potential for AF36.

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